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AN INSTITUTE FOR PUBLIC SCHOOL RESEARCHERS (JUNE 20-JULY 22, 1966) FINAL REPORT.
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A 5-week intensive training institute was conducted for 13 public school administrators who have research responsibilities under Title I and Title III projects. The program focused on research methodology and design, statistical procedures, evaluation of research, and proposal writing. The general format was a lecture or presentation period followed by a laboratory session for immediate application or study of the materials presented in the earlier session. Some time in each session was devoted to discussions and to question-and-answer activities, and 3 field trips were made to nearby research centers. The ability of the University to provide immediate computer application aided the teaching program. Pre- and posttests, measuring understanding of research terms and concepts, indicated substantial achievement of institute objectives. Participant-evaluations revealed that they got essentially what they had expected to get from the institute although they felt a greater length of time was needed to permit proper coverage of the proposed curriculum. A high level of participant motivation coupled with the enthusiasm and ability of the staff strengthened the program. Appended are publicity materials and 11 pages of written evaluations by the staff and 6 participants. (JS)

BR-6-2240
PA-24

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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FINAL REPORT

AN INSTITUTE FOR PUBLIC SCHOOL RESEARCHERS

Grant No. OEG-4-6-062240-1210

PA 24

June 20 to July 22, 1966
Bureau of Educational Research
University of Denver
Denver, Colorado

Submitted
October 28, 1966
to

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

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The training program reported herein was conducted pursuant to a grant from the Office of Education, U.S. Department of Health, Education, and Welfare. Grantees undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment of the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

Bureau of Educational Research
University of Denver
Denver, Colorado

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FINAL REPORT
OF
INSTITUTE OF PUBLIC SCHOOL RESEARCHERS

Bureau of Educational Research
University of Denver
June 20 - July 22, 1966

ORIENTATION OF PROGRAM

This institute was designed to provide intensive training in research for a specific group of public school and state department employees. It was a requirement of eligibility that the public school employee have a designated responsibility for federal programs or research in his school district and that state department employees have a primary association with projects requiring a knowledge of research methodology. The objectives of the program were concerned with research methodology and design, statistical procedures, evaluation of research, and proposal writing. The trainee group consisted of thirteen public school employees who were superintendents of schools and other administrative employees having responsibility in research under Title I and Title III projects. There were no state department trainees in attendance. There was a wide variance of background in statistics and research methodology among the participants and the extent of previous experience. The training program began on June 20, 1966 and ended on July 22, 1966. The instructional staff attended a three-day pre-planning session and a two-day post-evaluation session.

DESCRIPTION OF THE PROGRAM

The instruction schedule was carried out in two daily sessions of approximately three hours each. The general format was a lecture or presentation period followed by a laboratory session for immediate application or study of the materials presented in the lecture session. In addition to pre and post evaluations, examinations on the content materials were administered several times during the session. The laboratory assistant and one or more members of the instructional staff were in attendance in all laboratory and lecture sessions. Some time in each session was devoted to discussions and to question and answer activities.

The major content areas were organized to give considerable instruction and experience in research designs through the level of co-variance and factorial experiments. The necessary statistical computations were included. Most of the standard research models were considered and computer adaptations were carried out. One week of the afternoon sessions was devoted to the study of the preparation of research proposals and their evaluation. Finally, considerable attention was given to the proper evaluation or interpretation of research designs and statistical inferences.

On a topical basis the following items were included in the presentations by the staff in the five-week training session:

Descriptive statistics
Population and sample
Ranking procedures
Validity
Variability
The normal curve
Correlation
Reliability
Experimental errors
Analysis of variance
Analysis of co-variance
Factorial analysis
Probability
Sampling errors
Standard errors of the mean
Standard errors in the difference of means
Test of significance
Predictive procedures
Chi square
Pre-test and post-test design
Pre-test and post-test control group design
Solomon's four group design
Post-test only control group design
Time series
Non-equivalent control group
Q sort
Ex post facto research
Randomized block
Type I and type II errors
Computer application
Problems and delimitation
Problem construction
Procedures and findings
Conclusions and evaluation procedures
Proposal writing in Titles I and III in Public Law 89-10
Proposal case studies

No major changes were made in the program following the approval of the proposal. During the pre-planning period, the staff was able to prepare a schedule that dealt in considerable depth with each of the principle objectives. There were some modifications, particularly in the area of research writing, wherein the background of the candidates and the developing limitations of time restricted exercise in actual proposal writing. After the first Thursday seminar, the participants requested that this time be allocated to work in the computer lab. It was necessary to spend more time than had originally been planned on the use of the calculator during the lab sessions. The week devoted to proposal preparation was advanced to the second week due to a previous commitment on the part of one of the staff members. One staff change was made following the approval of the proposal. Dr. George Mouly of the University of Miami withdrew when his own application for an institute was approved. Mr. Bobby Hopkins proved to be an acceptable replacement.

EVALUATION OF THE PROGRAM

The following evaluation statements were based on (1) a pre-test, a post-test, and unit tests of the understandings of various research and statistical terms, (2) evaluative reports by the instructional staff, (3) evaluative reports by the trainees, and (4) general observations of the program director. It did appear that despite the wide range in backgrounds of the trainees and some minor modification in the amount of material that was covered, that the principle objectives and goals of the institute were met successfully.

Program factors. There is considerable evidence to indicate that the principle objectives of the institute were met. The pre-test (patterned after Stanley's AERA approach) sampled the level of understanding that the trainees had with regard to research terms and concepts. Their understanding level and computational ability with regard to statistics as measured on a five point scale on the pre-test indicated that the understanding level was predominantly at the C, D, and E level for research terms and concepts. There was a somewhat higher level of understanding of statistical terms although the level remained predominantly C, D, and E. At the computational level, there was some indication of higher accomplishment at the lower level of descriptive statistics. When the same instrument was applied as a post-test, the level of understanding swung sharply to the A, B, C level. Some notable exceptions to this improvement were related to error terms, rectangular distributions, affective

cognitive objectives, hypothetical constructs, and fixed-random models in the area of statistics. A low level of understanding remained for such terms as kurtosis, Duncan's tests, Fisher's z, index of discrimination, and parameter. At the computational level, the participants indicated that they were able to perform most of the computations required at the end of the institute. There remained some computing inability related to validity, kurtosis, Duncan's test, Fisher's z, index of discrimination, and normalizing a distribution. It is the opinion of the director that sufficient time was not available to improve the computation ability further. The evaluations submitted by the participants indicated that a greater length of time was necessary to permit proper coverage of the proposed curriculum. The participants, to a large extent, indicated that they got essentially what they had expected to get from the institute. The content of the institute appeared adequate and proper when related to the objectives, the background, and the desires of the participants. The major focus on research designs, statistical computations related to these designs, and to the essentials of the preparation of research reports and research proposals gave each participant an opportunity to improve his skills and understandings in these areas. The lab experiences were particularly helpful in that the participants had opportunity for immediate application of the lecture materials in practical problems. In some instances, the lab time was insufficient. The practice exercises, the computer problems, and the use of the computer assisted greatly in the attainment of an understanding not held by the trainees prior to the institute. Field trips to the downtown IBM Center, to the University of Denver Data Processing Department, and to the computer lab at the Denver Research Institute were of value to the participants. However, it appeared that the visit to the computer center was of the greatest interest to the participants.

The number of staff members was very adequate for the number of participants in training. It is doubtful that the staff would have been adequate if a full complement of thirty trainees had been in attendance. Higher attendance would not have materially effected the lectures, but would have seriously hampered the effectiveness of discussion periods. It also would have made it impossible to give the participants the great amount of one-to-one instruction that was carried out in the lab periods. Staff had adequate time for the preparation of their assignments and testing materials. The director and the research assistant had sufficient time to perform the administrative tasks. Secretarial assistance was adequate for the use of the director and teaching staff.

It is difficult to determine if the selection criteria were too restrictive since the inquiries may have been limited by the late date of approval of the institute. It is possible that the requirement of responsibility in the school district

reduced the number of applicants. The total number of applications was below the expected number. The trainees were widely distributed over the geographic area defined in the brochure and the distribution of the trainees within the six states was broad. Perhaps a wider geographic area and a longer announcement time would have increased the number of inquiries obtained. No problem arose with relation to the housing of the trainees in university-owned apartments and commuting between these apartments and the university campus.

There did not appear to be any major problems related to the organization of the institute. There was no indication that a different time of year would have been more attractive to the trainees. It did appear that five weeks was somewhat short for the amount of material that was presented. However, it appeared doubtful that the trainees could have devoted additional weeks to the institute. The daily schedule was planned in advance so that the trainees had a long-range view of the presentations. Minor modifications were made from day to day to adjust to the rate of progress of the trainees. Perhaps the most difficult thing to deal with was the lack of assimilation time since the workshop was concentrated and covered major quantities of content material daily. The classroom and facilities were adequate for the number of trainees who participated. Family housing in university apartments was quite satisfactory.

The budget for salaries and stipends was sufficient. However, the estimate of 2.5 dependents for trainees was low. Actually the number of dependents per trainees was 3.5. This did not become a factor financially since the number of trainees was less than expected. Several minor internal line item transfers were necessary. These transfers totaled $350.00, which was obtained from staff salaries and did not cause any major problems.

Strengths and weaknesses. An adequate appraisal of strengths and weaknesses of the institute is difficult of assessment. Certainly the enthusiasm and eagerness of the trainees obviously indicated that the faculty and staff constituted a strength. The method of presentation was not unusual and no major use was made of spectacular media. However, the ability of the university to provide immediate computer application strengthened the entire teaching program. The facilities provided were not unusual, although adequate. Overall, the outstanding features of presentation were reflected in the enthusiasm for teaching and the ability to explain exhibited by the staff. From the trainees standpoint, a real need for the material presented and a motivation to study was exhibited and strengthened

the institute considerably. As far as weaknesses were concerned, none appeared inherent in the institute itself. A variance in the backgrounds of the students was expected and did require some modification in the rate that material was presented. Some of the organizational problems arose from the short period of time available between the award of the institute and the starting date. Overall, it remains the opinion of the institute director that the institute was successfully carried out, that most of the trainees benefited considerably, and that the institute met their expectations. The pre-test and post-test and the evaluation supports this opinion.

Except for the aforementioned lateness of award, no major difficulties were encountered in the USOE organization of the program. The demands of the proposal and budget were not excessive and the instructions for preparation could be followed without undue concern. The office was very cooperative in answering mail and telephone inquiries. The USOE staff visitation of the institute was welcome and appropriate.

PROGRAM REPORTS

1. Publicity

The institute was publicized by means of newspaper releases through the University of Denver Public Information office. These releases appeared in the Denver Post and the University of Denver Clarion. A letter of invitation and a brochure were mailed to all superintendents of schools in the eight state region devised for the institute. Approximately 300 brochures were mailed. The first mailing occurred on May 6 and a follow-up letter clarifying certain questions raised by early respondees went to the same superintendents on May 16.

2. Application Summary

a.	Approximate number of inquiries from prospective trainees (letter or conversation)	23
b.	Number of completed applications received	18
c.	Number of first rank applications (Applicants who are well-qualified whether or not they were offered admission)	18
d.	How many applicants were offered admission	18

3. Trainee Summary

a. Number of trainees initially accepted in program	18
Number of trainees enrolled at the beginning of program	13
Number of trainees who completed program	13
b. Categorization of trainees	
(1) Number of trainees who principally are elementary or secondary public school teachers	1
(2) Number of trainees who are principally local public school administrators or supervisors	12
(3) Number of trainees from State education groups	0
(4) Number of trainees from colleges or universities, junior colleges, research bureaus, etc.	0

4. Program Director's Attendance

a. What was the number of instructional days for the program?	25
b. What was the per cent of days the director was present?	90

FINANCIAL SUMMARY

RESEARCH INSTITUTE 986

DIRECT COSTS	BUDGETED	EXPENDED	BALANCE
Personnel			
Faculty	$5750.00	$5346.01	$ 313.99
Secretary Salary	1500.00	1179.75	320.25
Graduate Assistant	1100.00	1100.00	- - -
Books and Periodicals	400.00	275.53	124.47
Supplies and Expenses	1200.00	882.25	317.75
Equipment Rental	600.00	525.00	75.00
Travel	500.00	212.50	287.50
Staff Fringe Benefits	810.00	810.00	- - -
Training Stipends	15750.00	8194.76	7555.24
Totals	$27610.00	$18615.80	$8994.20

APPENDIX A

BROCHURE

AN INSTITUTE FOR PUBLIC SCHOOL RESEARCHERS

Bureau of Educational Research
University of Denver
June 20 - July 22, 1966

The Bureau of Educational Research in the School of Education at the University of Denver in cooperation with the U. S. Office of Education offers a five week Institute for Public School Researchers from public school districts and state education agencies in the Rocky Mountain Region as authorized under Title IV of the Elementary and Secondary Education Act of 1965. In conducting this Institute, the University of Denver will adhere to Sec. 601, Title VI of the Civil Rights Acts.

objectives

The objectives of the Institute are to offer public educational directors of research and special programs specialized study in research methodology, design, measurement and evaluation, and research writing. The purpose of the Institute is to train the participants in the following areas:

A. Research methodology. To gain an understanding of usable methods in the scientific approach to problem-solving. To incorporate scientific language and methodology in preparing research proposals.

B. Research design. To comprehend the meaning, purpose, and principles underlying scientific methods in research design. To develop sound, sophisticated, and less sophisticated techniques in evaluating programs.

C. Program evaluation. To afford knowledge regarding methods of data collection and the relation of these methods to eventual evaluation. To analyze and interpret data in respect to projected hypotheses through the use of statistical tools on an elementary level.

D. Research writing. To prepare responsible officials to write meaningful reports of completed research for use and for appropriate dissemination.

A primary objective of the Institute is training educators to write proposals and to evaluate programs pertaining to Titles I, II, and III of the Elementary and Secondary Education Act of 1965.

program

The program of study will follow two approaches. First, fundamental research tools will be taught in a class situation adapted to the objectives of the Institute and the needs of the participants. Second, statistical techniques will be adapted to practical problems in education through a broad-field seminar approach.

The class curricula will include meaning, characteristics, and processes of educational measurement and evaluation; development and interpretation of standardized instruments; research processes related to educational evaluation; and selected statistical tools and processes.

The seminar will be organized into the following areas:

A. Research design. Problems and hypotheses. Constructs, variables, and definitions. Sampling and randomness. Design and application.

B. Program evaluation. Methodology: theory, structured and unstructured Q sorts, analysis of variance, correlation, significance. Interpretation: statistical presentation and analysis, interpretation of research data, conclusion.

C. Research writing. Research oriented format for report writing. Concise, objective, clear presentations. Dissemination: methods and media.

The seminar will meet daily for three hours each morning. The afternoon session will meet two hours daily.

eligibility

The thirty (30) participants will be selected according to the following criteria: The participant must

A. be a public school official designated by a local board of education as responsible for federal programs or research in the school district or be a State Department of Education official whose job responsibilities are primarily related to projects requiring research methodology.

B. possess a graduate degree and exhibit a previous course work pattern which would indicate probable success in an intensive institute of this type.

Selection will be made to insure a broad geographic representation from the following states: Colorado, New Mexico, Wyoming, Utah, western Nebraska, and western Kansas.

credit

No academic credit will be offered for participants in the institute.

stipends

Each participant will receive $75 for each week of the Institute plus $15 a week for each family dependent. Travel allowance will be made in the amount of 8¢ per mile for one round trip.

staff

Dr. Ralph A. Forsythe, Assoc. Professor
University of Denver
Dr. William M. Slaichert, Professor
University of Denver
Dr. George J. Mouly, Professor
University of Miami

housing

The housing facilities at the University afford single accommodations in student residence halls or family accommodations in apartment halls. Complete information concerning housing accommodations and an application for reservations are attached to this brochure.

the bureau

The Bureau of Educational Research is a division of the University of Denver School of Education. University institutional studies and projects contracted by the School of Education faculty are conducted in the Bureau. Specific projects funded through federal and foundation grants are also undertaken in the Bureau. Other studies are conducted which deal with finances, enrollment projections, classroom needs, curriculum improvement, special disciplines, and federal programs relating to public school systems.

The Bureau of Educational Research is the center for the Rocky Mountain School Study Council. Work and study of six standing committees made up of members from the eleven metropolitan Denver school districts in the Council are administered through the Bureau of Educational Research.

the school

The School of Education in the University of Denver is committed to the philosophy that teacher education in a private university has both a unique opportunity and a fundamental responsibility to be experimentally oriented. This responsibility, then, is discharged in terms of organization and flexibility of the curriculum and emphasis upon research activities.

The curricula of the School of Education lead to baccalaureate, master's, and doctoral degrees in a number of areas and specializations. The programs of teacher education at the University of Denver are accredited by the National Council for the Accreditation of Teacher Education.

For Further Information Write:
Dr. R. A. Forsythe, Director
Institute for Public School Researchers
P. O. Box 72
University of Denver
Denver, Colorado 80210

APPLICATION FOR ADMISSION

INSTITUTE FOR PUBLIC SCHOOL RESEARCHERS
Bureau of Educational Research
University of Denver
and
U. S. Department of Health, Education and Welfare
Office of Education
Washington, D. C.

I. Personal

Name_____ Social Security_____

Home Address_____ Office Address_____

_____ _____

_____ _____

phone phone

Sex____ Age____ Marital status_____

Number in family eligible for Institute dependency allowance____
(See attached note for qualification)

II. Professional Training - Colleges and Universities Which You Have Attended

Name of Institution	Degree	Major	Minor	Dates Attended

College and University Course Work

Course Title	Grade	Quarter Credit Hrs.	Year Taken
Intro. Educational Measurement			
Adv. Educational Measurement			
Introduction to Statistics			
Advanced Statistics			

Course Title	Grade	Quarter Credit Hrs.	Year Taken
Intro. Research Methods			
Adv. Research Methods or Design			
Other related course work:			

Accumulative Grade Point Average (graduate study only)
A=4, B=3, C=2 _____ G.P.A.

III. Professional Experience - List all professional experience for the last ten years. Start with your present or last position and work back.

Employer	Position	From	To

I certify that the statements made by me in this application are true and correct to the best of my knowledge and are made in good faith.

_____ _____
Signature of Applicant Date

. . . . . .

TO BE FILLED OUT BY EMPLOYER

I hereby certify that _____ is primarily responsible for research and/or federal program development and/or evaluation in _____.
educational agency

_____ _____ _____
signature of employer title date

UNIVERSITY OF DENVER School of Education
University Park, Denver, Colorado 80210
COLORADO SEMINARY

Dear Colleague:

Regarding the Institute for Public School Researchers (brochure attached) to be conducted in the Bureau of Educational Research at the University of Denver, June 20-July 22, 1966, the following dates and procedures should be considered.

1. Deadline for making application for the Institute and housing May 18, 1966
2. Notification of participants selected - before May 27, 1966
3. Registration and get-acquainted session for participants - June 20, 1966, 9 a.m. - noon
4. Holiday - July 4
5. Institute ends - July 22, 1966

The application must include:

1. Completed application form
2. Certification by employer that applicant's job responsibilities are primarily related to research and/or federal programs
3. A letter of application which
   a. explains the applicant's job
   b. points to the applicant's need for the training he would receive in the Institute

Housing: If the applicant would like to make reservations for university housing, he should return the housing form with the application. It is understood that the reservations would be contingent upon attendance in the Institute.

You may address all inquiries regarding the Institute application or housing reservations to: Dr. R. A. Forsythe
Bureau of Educational Research
P. O. Box 72
University of Denver
Denver, Colorado 80210
phone: 753-2300 or 753-2516

HOUSING INFORMATION

INSTITUTE FOR PUBLIC SCHOOL RESEARCHERS
Bureau of Educational Research
University of Denver
June 20 - July 22, 1966

Students and faculty members who are on the University of Denver ampus for all conferences, workshops and institutes, regardless of period f time housing is needed, are assigned to the CENTENNIAL CONFERENCE CENTER. his facility is available to single women, single men and married couples. partment facilities are available upon request.

ENTENNIAL CONFERENCE CENTER RATES

The following rates are American plan (room and three meals per days), ll linens, maid service, telephones are provided. Valet service is available.

Academic Rate - for Institute participants

	double room	single room
Daily	$8.00 per person	$10.00 per person
Weekly	$48.00 per person	$60.00 per person

APARTMENT FACILITIES

Furniture, dishes, and utilities only are furnished; linens are vailable at an added cost. The number of apartments available on campus is limited. Reservations will be made on a first-come basis.

By the Month 1 bedroom - $100.00
2 bedroom - $117.00

Institute participants may request reservations in the Centennial Conference Center or University apartments or they may make their own arrangements for accommodations off campus.

RESERVATIONS FOR HOUSING

INSTITUTE FOR PUBLIC SCHOOL RESEARCHERS
Bureau of Educational Research
University of Denver
June 20 - July 22, 1966

Check one. Reservations will be made for the duration of the Institute.

____ Reserve accommodations for me in a single room.

____ Reserve accommodations for me in a double room.

____ Reserve a double room for myself and my wife (twice double room rate).

____ Reserve a one-bedroom apartment for me.

____ Reserve a two-bedroom apartment for me.

____ Do not reserve accommodations for me.

Return this form with the Institute application. It is understood that the requested reservation for housing is contingent upon acceptance and attendance in the Institute.

signature_____

printed name_____

address_____

phone_____

APPENDIX B

STAFF EVALUATIONS

STAFF EVALUATIONS OF THE INSTITUTE FOR PUBLIC SCHOOL RESEARCHERS

William Slaichert

The evaluation of an institute of this nature is somewhat difficult since most impressions can be gained by observed behavior and limited objective evidence. I will, therefore, give my impressions based on discussions with the participants and the observed behaviors of them. Five major aspects of the program will be evaluated including: goals, physical environment, staff personnel, participants, and instruction.

GOALS

It would appear that most of the major objectives of the Institute were reached. The participants seemed to have the facility for discussing appropriate research designs with proper interpretation and analysis. In the weekly evaluations, they demonstrated a rather thorough understanding of the objectives that were taught. It would appear that very limited information was obtained as to their ability to write research proposals. This could be included in a future institute.

PHYSICAL ENVIRONMENT

Fortunately, the enrollment did not live up to expectations and the room size for the number of participants was adequate. The room would not hold more than two or three more and still make instruction possible at the efficient level that was had in this Institute. It would appear that the maximum size for the Institute should be limited to twenty people. This provides for a proper interaction between the instructional staff and the participants.

The use of the high-speed calculators made it possible for the participants to engage in the computational aspects of statistics at a rather efficient pace. It would appear that the ratio of two participants per machine was adequate. In spite of

the malfunction of two machines, effective service was provided by the Monroe Company in servicing on an immediate basis. One recommendation that would seem appropriate was that future institutes be housed in a facility that had adequate blackboard space. As the statistical analyses became more suitable and complex, more blackboard space was needed to develop the overall analysis. The participants seemed to indicate that the facilities were quite adequate and provided a proper setting for this kind of institute. All library materials were immediately available and the participants seemed to make effective use of them.

PERSONNEL

Excellent help was provided by the secretaries involved in this Institute. It would appear that it is imperative that at least one secretary be provided for each staff member involved. It was possible to provide resource materials for the participants almost immediately.

Under the able direction of Dr. Forsythe, the Institute was well organized and integrated. No problems were evident, which made the Institute a smooth operation. Under the direction of the director, all anticipated problems were discussed before the Institute was in session and during the Institute a number of staff meetings were held to make sure that no problems occurred. A great deal of credit is due to Dr. Forsythe for the success of this Institute. The graduate assistant, Mr. Jerry Southard, provided able assistance during the regular teaching session as well as providing the added instruction necessary during the laboratory sessions. Each participant was able to get his individual questions answered without delay.

PARTICIPANTS

The participants of this Institute were quite unusual. They represented a highly motivated and a cohesive group after the first few days. Basically, they represented an unsophisticated research group but were so highly interested in learning that rather rapid progress could be made during the instructional sessions. It should be noted that they refrained from discussing personal experiences. This seemed so unusual from other workshops or conferences in which I have been involved. They made valuable use of the lab time that was provided for them. In fact, many times they had to be asked to leave since the time had been used. They were able to relate the instructional experiences to an applied situation in a school district. They were primarily

interested in how they could improve the research program for public education. This is a credit to the participants. As the Institute progressed, it was observed that they were becoming sensitized to the problems that a researcher faces in an applied setting.

INSTRUCTION

One small problem was experienced due to a prior committment of this instructor. The statistics aspect was not interlocked with materials that were presented during the "research design" sessions. However, Mr. Hopkins did provide sufficient background whereby the participants could interpret the designs that he was giving. Within a short time when the statistics sessions had caught up with the research designs sessions, the participants were able to integrate the material. It would seem that in a future institute, the statistics might be taught on a full-time basis during the first two weeks up through simple analysis of variance. This would provide the framework for participants to understand many of the basic designs handled during the research sessions. However, during the fourth week of the Institute all of the participants indicated that they were understanding all materials covered and the "interlocking" problem had been solved. The textbook used for the statitics was adequate for the first two weeks. However, it would be suggested that funds be provided to buy a second statistics book which would stress those materials necessary for analysing more complex designs in educational research. I think this Institute demonstrated that it is possible to teach sophisticated statistical analyses providing the elementary statistics are well understood.

GENERAL OVERVIEW

I believe this Institute demonstrated that is is possible to attain a high level competence in statistical analysis providing a highly motivated and interested group of participants are involved.

It is recommended that a follow-up should be made in regard to these participants in order to determine if the material they had obtained during this Institute was being applied in their local situations. This could be done either through visitations to their local school by consultants, or by holding a week-long institute during March or April of 1967.

It is recommended that a future institute of this type be limited to twenty participants who will be responsible for research programs in their school districts.

It seemed evident in this Institute that the participants lacked background in the multitude of evaluative instructions that might be used in research projects. It would seem appropriate that an institute could be held which would describe and help develop evaluative instruments including those for school surveys, behavior changes, and attitudinal aspects of educational research.

Bobby Hopkins

A. Physical aspects. The classroom facilities, equipment, and supplies were satisfactory. The personnel and staff were cooperative and congenial, and the secretarial assistance provided was excellent. The computer facilities which were made available to us were adequate. The employees at the computer center gave excellent and prompt assistance. The integration of the research design class and the statistics class could have been improved. More time should be devoted to the research design principles toward the end of the Institute. The instruction concerning proposal writing should be an integral part of the Institute rather than being presented in large doses for a period of one week. In addition, each participant should be involved in writing an actual proposal which might possibly be applied for his own school district.

The Thursday evening seminars were not of value possibly due to the fact that with this small group of participants the necessary questioning and discussion took place in the class sessions themselves. However, I personally doubt whether such an evening seminar would be of value even for larger groups. A weekly seminar which could be held during the day instead of one of the regular class sessions would more likely meet a need.

Galfo and Miller's text was suitable for a group at this level of sophistication as was the statistics handbook by McKnight and McKnight. Unfortunately, the Campbell-Stanley chapter in Gage's handbook was out of print and consequently we were unable to provide each participant with a copy. This was undesirable but unavoidable for this Institute. Hopefully, this will not be repeated.

B. Participants. The participants showed a real interest in the object material which was presented. It was evident that each one put forth a reasonable amount of effort in order to increase his own understanding of the principles and procedures presented. I feel that the most significant impact of the Institute is revealed by their acquired attitude toward research as a

method of securing knowledge. I am sure that each participant increased his skill and understanding of the statistics involved in research as well as the experimental design considerings involved. However, obviously the participants remain at a rather elementary level as research personnel. The five-week Institute was of necessity a cookbook approach so that more material could be presented.

It is hoped that the participants gained a sensitization to the considerations underlying educational research and that these men will follow-up and continue studying in order to further prepare themselves for more competant research. I feel that the Institute met reasonably well the objectives for which it was conducted.

APPENDIX C

PARTICIPANT EVALUATIONS

AN INSTITUTE FOR PUBLIC SCHOOL RESEARCHERS
PARTICIPANT EVALUATIONS

Please respond to the following questions either in writing or on a dictating machine.

I. Regarding program of study.
   A. What were the strengths of the program?
   B. What were the weaknesses of the program?
   C. How would you improve the program?

II. Regarding organization and administration.
   A. Should the Institute be shorter (or longer)?
   B. Should it be at a different time of the year?
   C. Were housing accommodations satisfactory?
   D. Did you have adequate materials?
   E. Other suggestions.

III. Expectations.
   A. What did you expect to get out of the Institute before you came?
   B. Were your expectations reached?

Jack Burr, Superintendent of Schools, Manti, Utah

I.

A. Some of the strengths of the program are:

1. Stimulating an interest in research as an aid to efficient educational administration.

2. Obtaining an understanding of research design and methods by which more precision and power can be built into research proposals.

3. Getting a basic understanding of methods of statistical treatment for research evaluation.

4. Acquiring some basic tools to use in the evaluation of research as reported in the literature.

5. An awareness of the usefulness of the computer as an aid to statistical treatment of data.

6. A familiarity with the processing of data for computer treatment.

B. Weaknesses of program.

1. Not enough time to study.

C. I would suggest a longer time with a team of at least three (3) (someone from central office, a principal and counselor) so that there could be a better chance for implementation when we return.

II.

A. I would suggest at least an eight (8) week program to study the same amount of material, giving participants more time for reading.

B. Summer is the ideal time.

C. Housing was very satisfactory.

D. I had adequate materials available but not enough time to study them.

E. Have more of them and bring teams from participating districts.

III.

A. Expectations - The brochure advertising the Institute gave a pretty good description of what actually took place.

Kenneth Gardner, Superintendent of Schools, Falls City, Nebraska

I. This is a difficult program to evaluate due to my lack of knowledge at the beginning. However, to begin with, I want to say that this has been a most valuable five weeks, and I feel that the amount of material and information and education received is more than I can evaluate in these few moments. I feel one of the main strengths of the entire program was the staff that was available to the Institute. I certainly want to thank all who were participating: Dr. Forsythe, Dr. Slaichert, Mr. Hopkins, and Jerry Southard. This is the kind of confidence that I gained from this five weeks of the Institute. The entire staff has been more than cooperative and certainly had a good understanding of our problems from the beginning. I feel that with the extra time that they have put in to make this a worthwhile program certainly speaks well of staff here at the University as well as of the Institute. Also I would like to say that the attitude of the entire University staff has been most heartwarming and certainly they have made every effort to make this a helpful and educational project. Also, to the staff of the Bureau here who has also helped to make it a worthwhile stay. The availability of the computer and the room to punch the cards certainly was a thing that I had not expected. This has been most valuable and I feel will be able to be made use of in my own school system. The size of the class was a particular strength in that we were small enough that this allowed us to make use of the machines in the computer area as well as to ask questions and to seek the advice of the staff members. I certainly would recommend the small class in another institute. I would judge the entire program as a strong program for an institute of this type and I feel that it was well organized.

I was unable to list any particular strong weaknesses of the program since it was so well organized. About the only weakness I would say was the lack of blackboard space for Dr. Slaichert.

II. Probably the Institute could have been longer in terms of the number of weeks. I thought that possibly eight weeks would have been a greater advantage to the type of personnel that was here. Certainly we covered a lot of territory in five weeks. It definately should be in the summer due to the fact that this would be about the only time that the personnel could get away. The housing was more than adequate and certainly was satisfactory. We had adequate materials and certainly anything we wanted was accessible to us. I thought that the Institute itself was very enjoyable and I and my family want to thank the University of Denver, the Bureau of Educational Research, and Dr. Forsythe for making this Institute possible.

I might make one suggestion. That would be if in future years, if it is known that there is going to be an institute, if some advanced material could be sent out to the participants so that they could get some background of what they might cover during the institute it would be helpful not only to the professors but also to the students who would be participating.

III. I felt that I had a very small background in statistics and in research, and I felt that this is going to be necessary in the future for all programs concerning the public school. If there were any inadequacies, it was on my part. Certainly the amount of material and the information in the material presented us would be useful in my own situation and I hope to make use of the various designs and methods of research and statistics that were presented to us here. I would say that my expectations were reached to the highest degree. Again, thanks to all who made our stay in Denver and at the University so delightful.

Edward DeJarnett, Coordinator of Evaluation, Hobbs, New Mexico

I. Regarding program of study.

A. Strengths of the program were three things combined.

1. Men interested in learning and teaching without the grade effect.

2. Interaction of the students and professors on their problems and attempts to solve them.

3. High caliber type of teachers and Graduate assistant.

B. Weakness of program. I see no weakness other than I could have appreciated more time in the library to check out some of the studies mentioned and crossed references on some of our problems within our local system.

C. Improvement of program. If the Institute could afford three people from each system (example; one teacher, one counselor or worker in statistics, and one central office administrator), the program could be set off in the local school system with three people to support the ideas gleaned from the workshop.

II. Regarding organization and administration.

A. Time was just right.

B. Summer was o.k.

C. Housing was very satisfactory.

D. Materials were satisfactory.

E. Follow up with what we are doing might be highly beneficial.

III. Expectations.

A. Proposal writing, statistics, advice on designs, research.

B. Expectations were reached. I could have used more on proposal writing and examples of good types of proposals. The part we received was great. I could have had a whole summer of this type of program. I'm sure my school system will be pleased.

Summary. I was most impressed with your University. The staff was cooperative in helping me work for my school system while here. I received much help for the Education Department, Educational TV; the museum projects and the men were most helpful.

The high morale of your staff and within the various departments is quite impressive. Your secretarial staff is great. The work turnover is high in quantity as well as quality. Thanks so much for allowing me to attend.

Warren Bostrom, Teacher, Colorado Springs, Colorado

I. I thoroughly enjoyed the research Institute. I feel I have a greater grasp of statistics and research design than I have ever had before. I consider the strengths of the program to include such areas as the small group. I feel that had we had more than the thirteen, we would not have received nearly as much benefit as we have. Our teachers, including Mr. Hopkins, Dr. Slaichert, Dr. Forsythe, and Jerry Southard, have been excellent. Such minor items as name plates in the front of the various participants was good. I feel that I do know considerable more than I did on how to set up an experimental unit, how to write a proposal, how to find material as far as researches are concerned, I have a much better understanding of the computer, I understand the roll of the calculator as far as statistics are concerned, and I feel that I have a sensitivity to the whole area. As yet, I still do not feel real confident in the overall picture but through notes that I have taken, through books that I have been referred to, and through knowing individuals to whom I can go for assistance, I feel definately that I can help set up not only programs in my own classroom but also in the school district. Even the aspect of no grades was good. We came here to learn and did not have the pressure of having to get grades was a good item.

Again as I have said before, I reiterate that it was good overall. However, since nothing is perfect from my particular view, I feel that there could have been greater coordination between Mr. Hopkins and Dr. Slaichert as far as what each other was teaching. I feel, too, that possibly IBM could have been better prepared as far as what we had covered in our classroom. Perhaps greater coordination, again, between the Institute and IBM. We were given a wealth of material during these five weeks but how to apply, again, is not quite clear in every aspect. I think greater emphasis should be put on application. A suggestion that has been followed by the Industrial College of Armed Forces in their seminars--an outline of the lessons beforehand given to each participant might have been of value. It was rather difficult to follow the instructors when you were writing perhaps considerably behind while they were talking, they were putting work on the board, and trying to get this copied down and at the same time understanding what they had to say was rather difficult. Perhaps an overhead projector with transparencies of the various problems and various demonstrations would have been good and given handouts to the participants so that they could follow each step along the way without having to write it down.

I do feel that perhaps more on the roll in application statistics would have been good. A Dr. John Steele, who is in charge of computers at NCAR, is excellent. He might be a welcome addition as a guest speaker at a future seminar. It would have been interesting to have had a tour of the NU computer center. I would have liked to have had more writing as far as designed proposals are concerned. Perhaps more background material could be sent the participants before they come to an institute so they would be better prepared for what is before them. I feel a refresher course, perhaps in March as is tentatively planned, would be excellent to firm up the materials that we have learned after we have actually put them into operation.

II. I believe the Institute is just right in length. I believe it is the proper time of year. Housing accommodations were satisfactory. I believe we did have adequate materials.

III. What did you expect to get out of the Institute before you came is a question that did concern me. I am chairman of the Curriculum Committee for Social Studies at the junior high level in Colorado Springs. I am also a member of the K-12 Curriculum Committee for Social Studies. We talk and sometimes have pilot programs going on and I felt perhaps there is inadequacy in planning and control in evaluation. I have learned a number of items here which will help in this particular situation. I believe my expectations were reached and our eyes are opened now windows to new worlds. Exactly how they will fall in place still remains to be seen, but I do feel we had excellent personnel instructing us, taking charge, and I do appreciate and thank those who have made this possible.

Lee Johnsonbaugh, Director of Education, Lusk, Wyoming

I. Regarding program of study.

A. It appears to me that the biggest strength of the program was the caliber of the instruction. All the instructors were very patient, very thorough in their explanations to many of us who had not been through some of the materials, or if we had, it had been a considerable time since we had. The small size of the class led to much group discussion, which would not be possible with a larger group. Another strength of the program was the timelines relative to the various programs which are now getting underway in schools throughout the nation.

३. सेवा अनुबंधकाल में सेवा प्रत्यावर्तन अथवा प्रत्याहरण के बिना ही सेवा व्यवसायकर्ता अपने कौशल सेवाएँ तथा व्यवसाय संबंधित अन्य सेवा के व्यवसाय हेतु विशेष अधिकार प्राप्त करेगा।

४. विशेषतया, सेवा व्यवसाय अनुबंध के व्यवसाय में उपयोगकर्ता प्रत्याहरण अथवा के बिना ही ऐसे व्यवसाय करने के अथवा ऐसे व्यवसाय में व्यवसाय के अन्य व्यवसायकर्ता के सेवा संबंधित में ऐसे व्यवसाय अथवा प्रत्याहरण, ऐसे सेवा व्यवसाय प्रत्याहरण अथवा प्रत्याहरण व्यवसाय। विशेषतया, सेवा में यह किसी सेवा व व्यवसाय सेवाकर्ता व्यवसाय में सेवा प्रत्याहरण किया सेवा व्यवसाय व्यवसाय ऐसा व्यवसाय ऐसे व्यवसाय के व्यवसाय में अन्य प्रत्याहरणकर्ता किया सेवा व्यवसाय। विशेषतया, इस व्यवसाय सेवा सेवा व्यवसाय व्यवसायकर्ता व्यवसाय अन्य प्रत्याहरणकर्ता के सेवा व्यवसायकर्ता में सेवा सेवा प्रत्याहरण।

३. सेवा-प्रत्याहरण व्यवसायकर्ता अथवा व्यवसायकर्ता।

१. सेवा व्यवसाय में सेवा विशेषतया के प्रत्याहरण व व्यवसाय सेवा सेवा व्यवसायकर्ता व्यवसाय सेवा व्यवसाय में सेवा प्रत्याहरणकर्ता। विशेषतया, सेवा व्यवसायकर्ता व्यवसाय में सेवा व्यवसाय, सेवा व्यवसाय प्रत्याहरण सेवा व्यवसाय, सेवा व्यवसाय व्यवसाय में व्यवसाय सेवा व्यवसाय सेवा व्यवसाय प्रत्याहरणकर्ता विशेषतया व्यवसाय व्यवसाय में सेवा अन्य प्रत्याहरण।

२. सेवा सेवा का व्यवसाय में प्रत्याहरण सेवा व्यवसाय, व्यवसाय सेवा व्यवसाय व्यवसायकर्ता। सेवा व्यवसायकर्ता व्यवसाय व्यवसाय सेवा व्यवसाय व्यवसाय में सेवा व्यवसाय, व्यवसाय सेवा व्यवसाय व्यवसाय व्यवसाय व्यवसायकर्ता।

३. सेवा सेवा व्यवसाय व्यवसाय सेवा व्यवसायकर्ता व्यवसाय व्यवसाय व्यवसायकर्ता।

४. विशेषतया, सेवा व्यवसाय व्यवसायकर्ता व्यवसाय व्यवसाय व्यवसायकर्ता व्यवसाय व्यवसाय व्यवसायकर्ता व्यवसाय

3. However, I feel that the materials covered should be of great value to my work in a small school system. While we will probably not do much research as such, it will probably give me a considerably better understanding of terms and materials written concerning research.

I have enjoyed very much the five weeks spent at this Institute at the University of Denver. I am sure that all the members of the Institute appreciated the rather unlimited use of the computer facilities, which were new to most of us. However, it would appear that more time might have been spent on interpretation of any results which we had obtained from computer print-outs.

Willard Swindler, Elementary Principal, Sheridan, Wyoming

1. The strength of the program would be the planning and the very fine instructional procedures that were evident, and not only the instruction during the class time, but the interest and the willingness to give help before and after, etc.

If I were going to list a weakness of the program, I would be fast to specify in connection with and this is probably related to my background with regard to the subjects being studied, it [illegible] to me that it was too much material for the amount of [illegible] I do not feel that I have the necessary [illegible] to [illegible] I do not feel that I have the necessary [illegible] to [illegible] I do not feel that I have the necessary [illegible] to [illegible]

we might be able to release another time--summer seems to be the most satisfactory. Housing I would consider very satisfactory. The University of Denver was most agreeable. I have been in quite a number of student housings around and I think it was probably the nicest or the best accommodations that we have had. Materials-- I seemed to have had everything that was necessary and certainly the handouts and the extra measure that went into giving us the handouts, etc. were most appreciated.

I think perhaps I personally expected a little more in the areas of proposal writings, techniques, etc. However, I realize that this would come about through probably practice and at the same time the evaluation of these programs seems to be the critical aspect of the program at the present time, so maybe this was what we needed. I did get out of this just about what I expected. I think probably the opportunity to have instruction and an opportunity to work with the IBM or the computer program in giving us an inside or at least a bare beginning on what this tremendous potential is for this instrument and how, if we are going to be remaining in this area, that we have got to make use of this machine. I think if we do not, we are going to be even farther behind comparable other areas. I have appreciated all of the courtesies extended to myself in regard to the Institute and I would close by saying thank you.